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**Wu et al.**

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(54) **RADIAL POWER DIVIDER/COMBINER  
USING WAVEGUIDE IMPEDANCE  
TRANSFORMERS**

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**330/295**

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See application file for complete search history.

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(57) **ABSTRACT**

A radial power divider-combiner is disclosed. Such a radial divider-combiner may include a plurality of waveguides, each of which extends between a central monopole antenna and a respective peripheral monopole antenna. Such a waveguide may have a central portion with a height-to-width ratio of two, and a peripheral portion having an aspect ratio of one. To improve impedance-matching, a transformer portion may be disposed between the central portion and the peripheral portion. Such a transformer portion may have any number of sections, from one to infinity, with each section having a respective height between that of the central portion and that of the peripheral portion. In the extreme case, where the number of "sections" is infinite, the height of the transformer portion may vary linearly from that of the central portion and that of the peripheral portion.

**29 Claims, 17 Drawing Sheets**

